

REMARKS

Introduction

Claims 77-272 are currently pending in this application. Claims 1-76 were previously cancelled and claims 77-108, 211-222, and 259-272 were previously withdrawn from consideration. Claims 109, 122, 135, 163, 179, and 195 have been amended to more clearly define the claimed invention. No new matter has been added by the amendments to the claims. Applicant reserves the right to claim any lost subject matter in a continuation or divisional application.

Claims 109-210 and 223-258 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Shimoji U.S. Patent 5,420,458 (hereinafter "Shimoji") and Mattox et al. U.S. Patent 4,825,277 (hereinafter "Mattox").

Reconsideration and allowance of this application in light of the following remarks is hereby respectfully requested.

The Rejections Based on 35 U.S.C. § 103

The Examiner has rejected claims 109-210 and 223-258 under 35 U.S.C. § 103(a) as being unpatentable over Shimoji and Mattox. Applicant respectfully traverses.

Independent Claims 109,  
122, 135, 163, 179, and 195

It is well-established that "to establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art" (MPEP § 2143.03);

*In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). Applicant respectfully submits that the Examiner's § 103(a) rejection of independent claims 109, 122, 135, 163, 179, and 195 should be withdrawn at least because the Examiner's combination fails to disclose the claimed feature of "forming a thin substrate with a uniform thickness throughout the extent of the integrated circuit."

As an initial matter, nowhere does the combination of Mattox and Shimoji show or suggest "forming a thin substrate with a uniform thickness throughout the extent of the integrated circuit". Shimoji discloses making a semiconductor device having a high-speed device and a uniform plane bearing. The silicon substrate (see Shimoji, FIG. 2, element 21) of the semiconductor device is etched to shape a bottom recessed part (see Shimoji, FIG. 2, element 8). This bottom recessed part causes the silicon substrate to be of uneven thickness. While this fact is blatant from FIG. 2, Shimoji spells out this feature by saying that "the present invention does not allow the silicon substrate to be formed thin throughout." (see Shimoji, col. 5, lines 23-25). Further, this bottom recessed part is etched in each and every embodiment of Shimoji, as the remaining "FIGS. 3A-3C, FIGS. 4A and 4B, FIGS. 5A and 5B, and FIGS. 6A and 6B show detailed steps in a manufacturing method of a semiconductor device of FIG. 2." Accordingly, any semiconductor device formed by combining Mattox and Shimoji will have these recessed bottom parts. Such semiconductor devices do not show applicant's claimed feature of "forming a thin substrate with a uniform thickness throughout the extent

of the integrated circuit". For at least this reason, applicant respectfully submits that the combination of Mattox and Shimoji does not show or suggest "forming a thin substrate with a uniform thickness throughout the extent of the integrated circuit".

Further, none of the portions of Shimoji cited by the Examiner show or suggest forming a thin substrate with a uniform thickness throughout the extent of the integrated circuit. The Examiner contends that two parts of Shimoji disclose forming a thin substrate with a uniform thickness. The first part is element 21 of Shimoji's FIG. 3A. While this part of Shimoji is arguably a portion of a substrate with uniform thickness, as discussed above Shimoji etches bottom recessed parts into portions of this substrate to form the device shown in FIG. 2. Thus, element 21 of Shimoji's FIG. 3A does not show or suggest a thin substrate with a "uniform thickness throughout the extent of the integrated circuit," as required by each of applicant's amended independent claims.

The second part of Shimoji that the Examiner contends shows a thin substrate with a uniform thickness is the "plane bearing" language used at, *inter alia*, col. 2, lines 45 and 46 of Shimoji. Applicant respectfully disagrees with the Examiner's interpretation of the phrase "plane bearing" as used in Shimoji. Shimoji uses the phrase "plane bearing" to describe the continuous connection of its N<sup>-</sup> type silicon layer (element 22) and its N<sup>+</sup> type silicon layer (see Shimoji, col. 5, lines 20-22). This use of the phrase "plane bearing" has nothing to do with the uniformity of the thickness of Shimoji's

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substrate layer. Accordingly, Shimoji's reference towards having a "plane bearing" does not show or suggest applicant's claimed feature of forming a thin substrate with a "uniform thickness throughout the extent of the integrated circuit". For at least these additional reasons, each of applicant's independent claims 109, 122, 135, 163, 179, and 195 is allowable over the combination of Mattox and Shimoji.

Dependent Claims

Applicant has shown that each of independent claims 109, 122, 135, 163, 179, and 195 to be allowable. Claims 110-121, 123-134, 136-162, 164-178, 180-194, 196-210, and 223-258, each of which depends from one of claims 109, 122, 135, 163, 179, and 195, are allowable at least because they depend from an allowable claim. Applicant respectfully requests that the rejection of these claims be withdrawn.

Conclusion

The foregoing demonstrates that claims 109-210 and 223-258 are allowable. This application is therefore in

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condition for allowance. Reconsideration and allowance are accordingly respectfully requested.

Respectfully submitted,

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